
11. Rook

Program Name: Rook.java

Input File: rook.dat

You're playing chess on a nice $n \times m$ board. Your opponent has decided to place k rooks around the board. How many positions do you have to safely place your pawn? A rook can move only horizontally or vertically and capture horizontally or vertically.

Input

The first line of input consists of a single integer, t , indicating the number of test cases that follow.

For each test case, there will be three space-separated integers, n, m, k on a single line, where n represents the number of rows, m represents the number of columns, and k represents the number of rook positions. The next k lines have two space-separated integers each, representing the row and column placement of a rook. All positions are 0-indexed.

Output

For each test case, print on its own line number of locations you can place your pawn on the board.

Constraints

```
1 <= t <= 15
1 <= n, m <= 1000
0 <= k <= n * m
```

Example Input File

```
3
2 2 1
0 0
2 2 2
0 0
1 0
3 3 1
1 1
```

Example Output to Screen

```
1
0
4
```